Subject: Re: Slow execution with NaNs under Solaris 8 and 9
Posted by Rick Towler on Tue, 11 Mar 2003 20:10:49 GMT
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"Ivar Christopher" wrote in message

> We've recenty purchaced a couple of fast, new Sun systems, one running
> Solaris 8 and the other Solaris 9. At some point I discovered that
> some existing IDL code was running much slower than I expected on
> these systems. After much tracking down, it turns out that when
> various functions, including where() and trig functions, are called on
> data that contain IEEE Not a Numbers (NaNs), the execution speed drops
> by up to an order of magnitude.

FWIW, this problem doesn't show up in slowlaris 7 (using the attached program which may or may not be an appropriate test). These numbers were gathered while performing a backup but that should slow both tests down more or less equally.

```
IDL> test_slowlaris
{ sparc sunos unix 5.4.1 Jan 16 2001      32      64}
No NaNs:       30.699895
With NaNs:       25.150906
% Program caused arithmetic error: Floating illegal operand
```

-Rick

```
pro test_slowlaris

   print, !version

   bigArray = FINDGEN(10,1000000)

   start = SYSTIME(/SECONDS)

   null = WHERE(bigArray gt 290000.)
   null = WHERE(bigArray lt 100000.)
   null = WHERE(bigArray eq 123456.)
   null = sin(bigArray)

   print, 'No NaNs:', SYSTIME(/SECONDS) - start

   bigArray[0,*] = !values.f_nan
   bigArray[4,*] = !values.f_nan

   start = SYSTIME(/SECONDS)

   null = WHERE(bigArray gt 290000.)
```

```
    null = WHERE(bigArray lt 100000.)
    null = WHERE(bigArray eq 123456.)
    null = sin(bigArray)

    print, 'With NaNs:', SYSTIME(/SECONDS) - start

end
```

Subject: Re: Slow execution with NaNs under Solaris 8 and 9
Posted by Timm Weitkamp on Wed, 12 Mar 2003 09:47:42 GMT
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Ivar,

> Has anyone else observed anything similar?

On Solaris 8, I too observe a considerable drop in speed, though not an order of magnitude:

```
 IDL> print, getenv('OSTYPE')
 solaris8
 IDL> test_slowlaris
 { sparc sunos unix Solaris 5.6 Oct 26 2002      64      64}
 No NaNs:       2.4719300
 With NaNs:       5.6408559
```

Cheers,
Timm

On 11.03.03 at 12:10 -0800, Rick Towler wrote:

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>
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```
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> No NaNs:       30.699895
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> % Program caused arithmetic error: Floating illegal operand
>
> -Rick
>
> pro test_slowlaris
>
>     print, !version
>
>     bigArray = FINDGEN(10,1000000)
>
>     start = SYSTIME(/SECONDS)
>
>     null = WHERE(bigArray gt 290000.)
>     null = WHERE(bigArray lt 100000.)
>     null = WHERE(bigArray eq 123456.)
>     null = sin(bigArray)
>
>     print, 'No NaNs:', SYSTIME(/SECONDS) - start
>
>     bigArray[0,*] = !values.f_nan
>     bigArray[4,*] = !values.f_nan
>
>     start = SYSTIME(/SECONDS)
>
>     null = WHERE(bigArray gt 290000.)
>     null = WHERE(bigArray lt 100000.)
>     null = WHERE(bigArray eq 123456.)
>     null = sin(bigArray)
>
>     print, 'With NaNs:', SYSTIME(/SECONDS) - start
>
> end

--
Timm Weitkamp <http://people.web.psi.ch/weitkamp>
```